

b) a polynucleotide encoding a protein comprising the amino acid sequence of SEQ ID NO:2,

c) a polynucleotide encoding a protein comprising a fragment of the amino acid sequence of SEQ ID NO:2, having biological activity,

d) a polynucleotide which is an allelic variant of the polynucleotide of a) and,

e) a polynucleotide which encodes a species homologue of the protein of b) or c).

C1  
CONT

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27. **(Amended)** A nucleic acid probe comprising at least a fragment of a nucleic acid molecule comprising a nucleotide sequence capable of hybridizing under stringent conditions to the complement of the nucleotide sequence of SEQ ID NO:1, wherein the probe is of a length sufficient to hybridize with a complementary nucleic acid sequence thereto.

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C2

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29. **(Amended)** A method of increasing the survival of a cell comprising transforming the cell with the nucleotide sequence of SEQ ID NO:1.

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### REMARKS

C3

Claims 1-5, 7, 11-16, and 27-29 are pending. Claims 13, 27 and 29 have been amended. A copy of the pending claims is attached hereto as Appendix A. Support for amendments to Claims 13, 27 and 29 may be found in the Sequence Listing and amended specification. Attached hereto is a marked-up version of the changes made to Claims 13, 27 and 29 by current amendments. The attached page is captioned "Version With Markings to Show Changes Made."

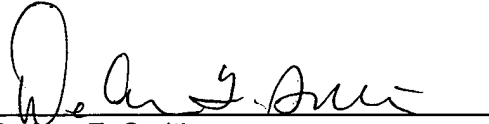
Applicants submit herewith a Substitute Sequence Listing.

Attached hereto is a Substitute Copy of Figure 1C.

No new matter has been added. Any amendments to and/or cancellation of the claims should in no way be construed as an acquiescence to any of the Examiner's rejections and was done solely to expedite the prosecution of the application. Applicants reserve the right to pursue the claims as originally filed in this or a separate application(s).

If a telephone conversation with Applicants' attorney would help expedite the prosecution of the above-identified application, the Examiner is urged to call Applicants' attorney at (617) 227-7400.

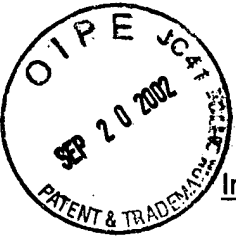
Respectfully submitted,

A handwritten signature in black ink, appearing to read "DeAnn F. Smith", written over a horizontal line.

DeAnn F. Smith  
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Date: September 16, 2002

**VERSION WITH MARKINGS TO SHOW CHANGES MADE****In the Claims:**

Please amend claims 13, 27, and 29 as follows:

13. **(Amended)** An isolated polynucleotide selected from the group consisting of:

a) a polynucleotide comprising the nucleotide sequence of [Figures 8A and 8B]

SEQ ID NO:1,

b) a polynucleotide encoding a protein comprising the amino acid sequence of [Figure 9] SEQ ID NO:2,

c) a polynucleotide encoding a protein comprising a fragment of the amino acid sequence of [Figure 9] SEQ ID NO:2, having biological activity,

d) a polynucleotide which is an allelic variant of the polynucleotide of a) and,

e) a polynucleotide which encodes a species homologue of the protein of b) or c).

27. **(Amended)** A nucleic acid probe comprising at least a fragment of a nucleic acid molecule comprising a nucleotide sequence capable of hybridizing under stringent conditions to the complement of the nucleotide sequence of [Figures 8A and 8B] SEQ ID NO:1, wherein the probe is of a length sufficient to hybridize with a complementary nucleic acid sequence thereto.

29. **(Amended)** A method of increasing the survival of a cell comprising transforming the cell with the nucleotide sequence of [Figures 8A and 8B] SEQ ID NO:1.

**APPENDIX A: PENDING CLAIMS**

1. An isolated nucleic acid molecule encoding hlre1p comprising the nucleotide sequence of SEQ ID NO:1.

2. A vector comprising the nucleic acid molecule of Claim 1.

3. A cell transformed with the nucleic acid molecule of Claim 1.

4. The cell of Claim 3, wherein the cell is a mammalian cell.

5. The cell of Claim 3, wherein the cell is a bacterial cell.

7. A transfected cell producing the protein of Claim 6.

11. The antibody of Claim 10, wherein the antibody is monoclonal.

12. The antibody of Claim 10, wherein the antibody is polyclonal.

13. An isolated polynucleotide selected from the group consisting of:

a) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:1,

b) a polynucleotide encoding a protein comprising the amino acid sequence of

SEQ ID NO:2;

c) a polynucleotide encoding a protein comprising a fragment of the amino acid sequence of SEQ ID NO:2, having biological activity,

d) a polynucleotide which is an allelic variant of the polynucleotide of a) and,

e) a polynucleotide which encodes a species homologue of the protein of b) or c).

14. An isolated polynucleotide of Claim 13 wherein said polynucleotide is operably linked to an expression control sequence.

15. A host cell transformed with a polynucleotide of Claim 14.

16. The host cell of Claim 15, wherein said cell is a mammalian cell.

27. A nucleic acid probe comprising at least a fragment of a nucleic acid molecule comprising a nucleotide sequence capable of hybridizing under stringent conditions to the complement of the nucleotide sequence of SEQ ID NO:1, wherein the probe is of a length sufficient to hybridize with a complementary nucleic acid sequence thereto.

28. A method of screening a sample for a nucleic acid molecule encoding Ire1p, wherein the sample comprises nucleic acid sequences, comprising the steps of:

- a) contacting the sample with the nucleic acid probe of Claim 27 wherein the nucleotides represented by "T" are selected from the group consisting of thymidine or uracil; and
- b) detecting hybridization of the probe to complementary nucleic acid sequences encoding Ire1p in the sample.

29. A method of increasing the survival of a cell comprising transforming the cell with the nucleotide sequence of SEQ ID NO:1.

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